

DIRECTIONS

Evaluate the student by checking the appropriate box to indicate the degree of Competency. The rating for each task should reflect **employability readiness** rather than the grades given in class.

Rating Scale:

- 0 No exposure**
- 1 Introduced-** the student has been exposed through non participatory instruction (e.g. lecture, demonstration, field trip, video).
- 2 Practiced-** the student can perform the task with direct supervision.
- 3 Entry-Level Competency-** the student can perform the task with limited supervision and/or does not perform the task to standard (a typical entry-level performance expectation).
- 4 Competency-** the student consistently performs task to standard with no supervision (on at least two occasions or at instructor's option).

Woodworking – 48.0700

GENERAL SKILLS

0 1 2 3 4

A. Practice Workplace Safety

- *A.001 Define specific safety terms.
- *A.002 Demonstrate the use of proper clothing, safety glasses, aprons, shields, breathing apparatus, hearing protection, push sticks and other safety equipment.
- *A.003 Demonstrate knowledge of appropriate fire safety practices.
- *A.004 Demonstrate knowledge of appropriate first aid procedures.
- *A.005 Follow proper hazardous material handling procedures in accordance with federal and state regulations, being aware of “Right to Know” regulations.
- *A.006 Safely use tools and equipment listed in the appendix (list to be developed by each area vocational center).
- *A.007 Identify unsafe conditions and report them to the supervisor (know when your instincts tell you that you are beyond the safety parameters of the equipment).
- *A.008 Set up and safely use auxiliary guards, guides, jigs, push sticks, and fences.
- *A.009 Be familiar with material safety data sheets (finishes, adhesives, ...), demonstrating ability to read and interpret them.
- *A.010 Be able to define the role of OSHA as a regulatory agency overseeing industry.
- *A.011 Be aware of OSHA standards for small shops with regard to dust and airborne particulates.
- *A.012 Be aware of federal and state standards with regard to the use of formaldehyde processed building materials.
- *A.013 Inspect and maintain each piece of equipment (hand and power) for safety.

B. Use Hand Tools

- *B.001 Demonstrate knowledge of methods to sharpen/hone cutting, shaping, scraping, and drilling tools.
- *B.002 Lay out 45 and 90-degree angles with squares.
- *B.003 Gauge lines parallel to an edge with finger, rule, and square.
- *B.004 Perform quality control tasks during progress of work. (“Check your work as you go-measure twice, cut once”)
- *B.005 Cope molding.
- *B.006 Scribe and fit edges of stock to an irregular surface.
- *B.007 Drill, countersink, counterbore, and plug for screws.
- *B.008 Drive screws.
- *B.009 Drive and set nails.
- *B.010 Crosscut and rip to a layout line.
- *B.011 Cut metal with a hacksaw.
- *B.012 Divide a distance into equal spaces using a divider, a story pole, and/or a calculator.
- *B.013 Be familiar with the use of the mallet, chisel, hand plane, hand saw, brace and bit, and sanding block in cutting, shaping, and fitting of project materials.
- *B.014 Be familiar with the use of gauges in measurement of tolerances.

C. Operate a Circular Saw

- *C.001 Select appropriate blade for the job; remove and replace blades and make adjustments.
- *C.002 Make straight cuts to layout lines.
- *C.003 Make pocket cuts.
- *C.004 Make bevel and compound angle cuts.
- *C.005 Make precision cuts with a straight edge.
- *C.006 Finish off interior corners with a hand saw.
- *C.007 Be familiar with allowances for saw kerf in cutting of wood.

D. Operate a Saber Saw

- *D.001 Select appropriate blade for the job; remove and replace blade and make adjustments.
- *D.002 Make cuts to curved layout lines.
- *D.003 Make bevel cuts.
- *D.004 Make pocket cuts.

E. Operate a Hand Drill

- *E.001 Select appropriate drill and/or bit for the job; remove and replace drills and bits.
- *E.002 Drill and bore holes through stock.
- *E.003 Drill and bore holes to specified depth.
- *E.004 Bore angled holes.
- *E.005 Understand the tolerancing of a countersunk hole.

F. Operate a Power Screwdriver

- *F.001 Select appropriate bit for the job (identify head size); remove and replace bits and make adjustments, understanding the foot-pound limits of a power screwdriver.
- *F.002 Drive screws.

G. Operate a Router

- *G.001 Select appropriate bit for the job; remove, select, and replace bits and make adjustments.
- *G.002 Shape edges.
- *G.003 Cut grooves, dados (both plunge and through), and rabbets.
- *G.004 Make and use templates for routing.
- *G.005 Rout freehand.
- *G.006 Cut large radiuses with various styles of trammels.
- *G.007 Perform precision cuts with a straight edge.
- *G.008 Cut dovetails using dovetail template.
- *G.009 Understand travel and motion of a router (grain considerations).

H. Operate a Sander

- *H.001 Select appropriate abrasive for the job; remove and replace abrasive and make adjustments.
- *H.002 Sand a surface with a finishing sander.
- *H.003 Sand a surface with a belt sander.
- *H.004 Clean belts with neoprene belt cleaners.

I. Operate Stationary Sanding Machines

- *I.001 Select appropriate abrasive for a specific job.
- *I.002 Set up and use a belt sander to sand a surface.
- *I.003 Set up and use disc sander to sand a surface.
- *I.004 Set up and use spindle sander to sand surfaces.
- *I.005 Sand shapes properly with hand held molds on a vertical or horizontal belt driven mechanism.
- *I.006 Clean belts with neoprene belt cleaners.

J. Operate Staplers and Nailers

- *J.001 Fasten material with a hand stapler.
- *J.002 Fasten material with a pneumatic stapler and/or nailer.
- *J.003 Fasten butt joint with a pneumatic corrugated fastener tool.
- *J.004 Gauge compression pressure to the material to be fastened.
- *J.005 Be aware of gas-operated impulse guns for fastening materials.

K. Operate a Table Saw

- *K.001 Inspect, clean, and lubricate a table saw.
- *K.002 Select appropriate blade for the job; remove and replace table saw blades.
- *K.003 Make a crosscut to predetermined size.
- *K.004 Make a rip cut to predetermined size.
- *K.005 Lay out and cut a miter.
- *K.006 Install dado head to predetermined size.

- *K.007 Cut a dado to predetermined size.
- *K.008 Cut a groove to predetermined size.
- *K.009 Set up and adjust molding head to cut molding pattern.
- *K.010 Make a rabbet to predetermined size, using supplementary rabbet fence.
- *K.011 Make a series of duplicate crosscuts.
- *K.012 Set up saw for tenoning and make a tenon of predetermined size.

L. Operate a Radial Arm Saw

- *L.001 Inspect, clean, and lubricate a radial arm saw.
- *L.002 Remove and replace radial arm saw blades.
- *L.003 Make a crosscut to predetermined size.
- *L.004 Crosscut duplicate lengths.
- *L.005 Cut a miter and compound miter to predetermined size.
- *L.006 Install dado head to predetermined size.
- *L.007 Cut a dado to predetermined size.
- *L.008 Cut a groove to predetermined size.

M. Operate a Drill and Drill Press

- *M.001 Inspect, clean and lubricate a drill and drill press.
- *M.002 Select appropriate cutting tool for the job; remove and replace cutting tool and adjust table and stops.
- *M.003 Drill and bore holes in stock.
- *M.004 Counterbore holes in stock.
- *M.005 Countersink holes in stock.
- *M.006 Drill holes in round stock.
- *M.007 Make plugs.
- *M.008 Demonstrate ability to fasten stock to work surface.
- *M.009 Bore holes at an angle.
- *M.010 Bore spaced holes.
- *M.011 Drill dowel holes in miters.

N. Operate a Jointer

- *N.001 Inspect, clean and lubricate a jointer.
- *N.002 Remove, replace, and adjust blades or knives.
- *N.003 Face rough stock.
- *N.004 Square edge faced stock to specification.
- *N.005 Bevel or chamfer stock to specification.
- *N.006 Cut tapers on a jointer.
- *N.007 Adjust infeed/outfeed of a jointer.
- *N.008 Cut rabbet on a jointer.
- *N.009 True up one face of stock which is cupped, bowed, or crooked.
- *N.010 Grind with a jointer to a specific angle.

O. Operate a Planer

- *O.001 Inspect, clean, and lubricate a planer.
- *O.002 Remove, replace, and adjust blades or knives.
- *O.003 Plane stock to specified thickness.
- *O.004 Face rough stock.

- *O.005 Compare and contrast the uses of the planer and the jointer in the surfacing of stock.

P. Operate a Band Saw

- *P.001 Inspect, clean, and lubricate a band saw.
- *P.002 Select appropriate blade for the job; remove and replace a band saw blade and adjust guides.
- *P.003 Fold band saw blade for storage.
- *P.004 Lay out and make a straight cut.
- *P.005 Lay out and make a freehand cut.
- *P.006 Make relief saw cuts.
- *P.007 Make beveled cuts.
- *P.008 Cut circles with jigs.
- *P.009 Resaw a board (to thickness).
- *P.010 Make a repetitive pattern cuts from a template.
- *P.011 Make cluster jigs to band saw like parts.

Q. Operate a Table Router

- *Q.001 Inspect, clean, and lubricate a router.
- *Q.002 Select appropriate cutting bits for the job; remove and install cutting bits and make adjustments.
- *Q.003 Rout stock with a template.
- *Q.004 Mold stock with a fence.
- *Q.005 Mold stock with a miter gauge.
- *Q.006 Rout stock with collars.

R. Operate a Shaper

- *R.001 Inspect, clean, and lubricate a shaper.
- *R.002 Select appropriate bits for the job; remove and install cutting bits and adjust.
- *R.003 Shape stock with a template/jig.
- *R.004 Mold stock with a fence.
- *R.005 Mold stock with a miter gauge.
- *R.006 Shape stock with collars.
- *R.007 Check the rotation of the shaper.

S. Operate a Power Miter Box

- *S.001 Remove and replace blade.
- *S.002 Crosscut to length.
- *S.003 Cut miters.
- *S.004 Inspect and clean a power miter box.
- *S.005 Cut duplicate lengths.
- *S.006 Double check proper angle of work, using a tri-square.

T. Operate a Joining Machine

- *T.001 Calibrate the depth of plunge cut.
- *T.002 Calibrate the distance from surfaces to be joined.
- *T.003 Select appropriate size of materials to be used.
- *T.004 Match biscuit to the depth of plunge.

U. Operate a Wood Lathe

- *U.001 Inspect and clean a wood lathe.
- *U.002 Mount and true stock.
- *U.003 Turn a straight cylinder to specified diameter.
- *U.004 Cut or scrape shoulders to round.
- *U.005 Cut or scrape a taper.
- *U.006 Cut or scrape a V-groove.
- *U.007 Cut or scrape a bead.
- *U.008 Cut or scrape a cove.
- *U.009 Sand turned stock.
- *U.010 Make a spindle turning of specified design.
- *U.011 Mount a faceplate turning stock.
- *U.012 Make a face plate turning of specified design.
- *U.013 Make duplicate face plate turnings.
- *U.014 Sharpen turning tools.
- *U.015 Make duplicate spindle turnings, using a duplicator.

V. Operate a Mortiser

- *V.001 Select, remove, replace, and adjust a hollow chisel and bit.
- *V.002 Punch a mortise.
- *V.003 Adjust stops and punch identical mortises.

W. Operate Hand Held Power Planes

- *W.001 Select appropriate cutter/knives for the job; remove and replace cutter and make adjustments.
- *W.002 Plane and square a straight edge.
- *W.003 Plane a beveled edge.

X. Operate a Scroll Saw

- *X.001 Remove, select, and replace blades, adjusting tension.
- *X.002 Make external cuts.
- *X.003 Make internal cuts.

Y. Operate a Tenoner

- *Y.001 Remove and replace cutting tools.
- *Y.002 Cut a tenon with square shoulders.
- *Y.003 Cut a tenon with offset square shoulders.
- *Y.004 Cut a tenon with coped shoulders.
- *Y.005 Cut tenons on both ends of identical lengths.

Z. Plan, Design and Lay Out Casework

- *Z.001 Make an elevation drawing of a job.
- *Z.002 Interpret blueprints and explain common abbreviations used on drawings.
- *Z.003 Use architect scale.
- *Z.004 Make materials/cutting lists for a job.
- *Z.005 Develop a plan of procedure for a job.
- *Z.006 Make out work orders, parts listings, and billings.

- *Z.007 Select and match wood for compatibility of grain and color.
- *Z.008 Draw plans, sections, and details.
- *Z.009 Understand the applications of a layout rod for a job.
- *Z.010 Lay out angles of various degrees.
- *Z.011 Make an orthographic drawing of a job.
- *Z.012 Lay out a hexagon, octagon, and ellipse.

AA. Construct Joints

- *AA.001 Construct a dado joint.
- *AA.002 Construct a rabbet joint.
- *AA.003 Construct a miter joint.
- *AA.004 Install dowels in common wood joints.
- *AA.005 Construct a tongue-and-groove joint.
- *AA.006 Construct a spliced joint.
- *AA.007 Construct a mortise-and-tenon joint.
- *AA.008 Construct a lap joint.
- *AA.009 Construct a dovetail joint.
- *AA.010 Construct an end lap joint.
- *AA.011 Construct a middle lap joint.
- *AA.012 Construct a cross lap joint.
- *AA.013 Construct a dovetail lap joint.

BB. Fasten Stock and Joints

- *BB.001 Select the appropriate fastener for the job.
- *BB.002 Fasten stock with wood glue and parallel clamps.
- *BB.003 Fasten stock and joints with nails.
- *BB.004 Fasten stock and joints with screws.
- *BB.005 Fill and finish nail and screw holes.
- *BB.006 Conceal screw holes by counterboring and plugging.
- *BB.007 Glue and clamp stock edge to edge using bar clamps.
- *BB.008 Glue and clamp a miter with miter clamps.
- *BB.009 Fasten stock and joints with staples.
- *BB.010 Fasten stock and joints with bolts.
- *BB.011 Apply corner blocks with glue.
- *BB.012 Band and edge by gluing and clamping with edging clamps.
- *BB.013 Use spring clamps to clamp stock.
- *BB.014 Fasten stock to walls using solid wall anchors.
- *BB.015 Fasten stock to walls using hollow wall anchors.

CC. Install Cabinet Doors and Hardware

- *CC.001 Fit and hang cabinet doors to specifications.
- *CC.002 Install sliding cabinet doors to specifications.
- *CC.003 Install cabinet door catches and pulls to specifications.
- *CC.004 Install door and drawer hardware to specifications.
- *CC.005 Compare and contrast European and American hardware system.

DD. Apply Laminates

- *DD.001 Cut laminate to rough size.
- *DD.002 Laminate a counter top.

- *DD.003 Laminate a cabinet.
- *DD.004 Laminate a curved surface.
- *DD.005 Band edges of solid doors.
- *DD.006 Cut, trim, and join laminates with a router.
- *DD.007 Make a tambour door.
- *DD.008 Choose the appropriate glue for a specific job.

EE. Finish Surface

- *EE.001 Prepare a surface for finishing.
- *EE.002 Stain a surface.
- *EE.003 Fill a surface.
- *EE.004 Seal a surface.
- *EE.005 Spray on a clear top coat.
- *EE.006 Compare and contrast the various finishing materials, including oils and oil finish products.
- *EE.007 Bleach a surface.
- *EE.008 Brush on a clear top coat.
- *EE.009 Understand the furniture wood grading system.
- *EE.010 Recognize the natural defects on lumber.

FF. Make and Laminate Curved Places

- *FF.001 Make a curved piece by cutting from solid stock.
- *FF.002 Make a curved piece by saw kerfing.
- *FF.003 Make a curved piece by building up with curved segments.
- *FF.004 Make a curved piece by laminating thin strips.

GG. Apply Mathematical and Measurement Basic Skills

- *GG.001 Apply basic computational skills with whole numbers to solve mathematical problems.
- *GG.002 Apply basic computational skills with fractions to solve mathematical problems.
- *GG.003 Apply basic measurement skills (English and Metric), including conversion.
- *GG.004 Apply basic geometric skills to solve mathematical problems.
- *GG.005 Use calculators to demonstrate applications of functions.

HH. Understand the Applications of Specialized Equipment

- *HH.001 Understand the applications of numerical control equipment, electronic wood welders, overarm routers, abrasive planers/polishers, ...

BUSINESS MANAGEMENT AND RECORD KEEPING

A. Evaluate Millwork/Cabinetmaking Enterprises

- *A.001 Establish millwork/cabinetmaking career goals.
- *A.002 Compare different millwork/cabinetmaking businesses.
- *A.003 Understand and describe a job grading system as it pertains to factory production planning.

B. Develop a Millwork/Cabinetmaking Business or Service

- *B.001 Prepare/maintain a resource inventory.
- *B.002 Develop a budget.

C. Finance a Millwork/Cabinetmaking Business

- *C.001 Identify sources of credit.
- *C.002 Investigate sources of credit.
- *C.003 Prepare a case for obtaining credit.

D. Manage Finances and Records

- *D.001 Evaluate record keeping systems.
- *D.002 Select and maintain business records.
- *D.003 Prepare a cash flow statement.
- *D.004 Calculate and analyze statement of financial condition.
- *D.005 Complete a profit and loss statement.
- *D.006 Balance a bank statement.
- *D.007 Calculate cost efficiency factors.
- *D.008 Identify agencies assisting small businesses.
- *D.009 Locate tax documents.
- *D.010 List sources and kinds of business insurance.
- *D.011 Prepare and mail bills to collect accounts due.
- *D.012 Determine insurance coverage needs.
- *D.013 Prepare a depreciation schedule.
- *D.014 Calculate net worth.

E. Analyze Contracts, Leases, and Other Legal Documents

- *E.001 Identify major elements in contracts and lease agreements.
- *E.002 Develop business agreements.

F. Use Sources of Millwork/Cabinetmaking Information and Assistance

- *F.001 Participate in associations and societies related to the millwork/cabinetmaking industry.

G. Manage Machinery and Equipment

- *G.001 Determine equipment and machinery requirements for the operation.
- *G.002 Develop budgets for changing machinery and equipment.
- *G.003 Evaluate machinery and equipment acquisition by purchase or lease.
- *G.004 Compare cost, efficiency and maintenance requirements of various models and makes of machinery and equipment.

H. Apply Computer Technology

- *H.001 Identify computer software.
- *H.002 Select and use computer software for records, reports, and other business applications.

I. Perform General Office Work

- *I.001 Process incoming telephone calls.
- *I.002 Process outgoing telephone calls.
- *I.003 Clean work area.

- *I.004 File materials.
- *I.005 Enter information on computer.
- *I.006 Prepare report with a word processor.
- *I.007 Process incoming mail.
- *I.008 Process outgoing mail.
- *I.009 Schedule appointments and meetings.
- *I.010 Duplicate materials.
- *I.011 Prepare bank deposits.
- *I.012 Maintain mailing list.
- *I.013 Mail bills to collect accounts due.
- *I.014 Describe the management of a payroll ledger.

SALES, MERCHANDISING, AND MARKETING

A. Perform Sales Tasks

- *A.001 Identify customer needs and wants.
- *A.002 Conduct and close a sale.
- *A.003 Process telephone orders for parts or services.
- *A.004 Make cost estimates for customer requests.
- *A.005 Follow-up sales or services to determine customer satisfaction.
- *A.006 Complete sales business forms.
- *A.007 Use effective interpersonal relationships in dealing with customers.
- *A.008 Order supplies and stock.
- *A.009 Write up customer orders.
- *A.010 Estimate freight/delivery charges.
- *A.011 Check credit references of customers.
- *A.012 Explain concept of lead time for product delivery.

B. Advertise and Market Products and Services

- *B.001 Prepare advertising materials.
- *B.002 Set up displays.
- *B.003 Plan marketing strategy.
- *B.004 Examine consumer characteristics.
- *B.005 Use supplier advertising materials.

C. Perform Customer Services

- *C.001 Process customer complaint.
- *C.002 Process customer product returns.
- *C.003 Maintain customer file system.

D. Interpret State and Federal Rules and Regulations

- *D.001 List agencies responsible for inspecting and regulating businesses.
- *D.002 Secure necessary inspections, certificates, and registrations.
- *D.003 Maintain a file of current regulations.

E. Maintain Inventory Control System

- *E.001 Order merchandise.
- *E.002 Record inventory.
- *E.003 Receive and stock inventory.

*E.004 Prepare a physical inventory, being able to compare/contrast perpetual vs. physical inventory.